



SEQUENCE LISTING

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Turcotte, Carl

<120> METHODS OF PRODUCING SILK POLYPEPTIDES AND PRODUCTS THEREOF

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<160> 48

<170> PatentIn version 3.2

<210> 1

<211> 646

<212> PRT

<213> Artificial sequence

<220>

<223> MaSpI polypeptide

<400> 1

Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln
1 5 10 15

Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Gln
20 25 30

Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly
35 40 45

Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Leu Gly Gly
50 55 60

Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Val Gly Gln
65 70 75 80

Gly Gly Leu Gly Gly Gln Gly Ala Gly Gln Gly Ala Gly Ala Ala Ala
85 90 95

Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser
100 105 110

Gln Gly Ala Gly Arg Gly Gly Ser Gly Gly Gln Gly Ala Gly Ala Ala
115 120 125

Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly
130 135 140

Ser Gln Gly Ala Gly Arg Gly Gly Leu Gly Gly Gln Gly Ala Gly Ala
145 150 155 160

Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly
165 170 175

Leu Gly Gly Gln Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser
180 185 190

Gln Gly Ala Gly Arg Gly Gly Leu Gly Gly Gln Gly Ala Gly Ala Ala
195 200 205

Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Leu Gly Gly Gln
210 215 220

Gly Ala Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Gly Gly Ala
225 230 235 240

Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly
245 250 255

Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Val Gly Ala Gly Gln
260 265 270

Gly Gly Tyr Gly Gly Gln Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu
275 280 285

Gly Ser Gln Gly Ala Gly Arg Gly Gly Leu Gly Gly Gln Gly Ala Gly
290 295 300

Ala Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly Gly Leu Gly
305 310 315 320

Gly Gln Gly Ala Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Gly
325 330 335

Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Asn Gln Gly Ala Gly
340 345 350

Arg Gly Gly Gln Gly Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln
355 360 365

Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Leu

370 375 380
 Gly Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly
 385 390 395 400
 Gln Gly Gly Tyr Gly Gly Leu Gly Gly Gln Gly Ala Gly Gln Gly Gly
 405 410 415
 Tyr Gly Gly Leu Gly Ser Gln Gly Ser Gly Arg Gly Gly Leu Gly Gly
 420 425 430
 Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala Gly Gly Ala Gly Gln Gly
 435 440 445
 Gly Leu Gly Gly Gln Gly Ala Gly Gln Gly Ala Gly Ala Ala Ala Ala
 450 455 460
 Ala Ala Gly Gly Val Arg Gln Gly Gly Tyr Gly Gly Leu Gly Ser Gln
 465 470 475 480
 Gly Ala Gly Arg Gly Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala
 485 490 495
 Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Gly Gln Gly Val
 500 505 510
 Gly Arg Gly Gly Leu Gly Gly Gln Gly Ala Gly Ala Ala Ala Ala Gly
 515 520 525
 Gly Ala Gly Gln Gly Gly Tyr Gly Gly Val Gly Ser Gly Ala Ser Ala
 530 535 540
 Ala Ser Ala Ala Ala Ser Arg Leu Ser Ser Pro Gln Ala Ser Ser Arg
 545 550 555 560
 Val Ser Ser Ala Val Ser Asn Leu Val Ala Ser Gly Pro Thr Asn Ser
 565 570 575
 Ala Ala Leu Ser Ser Thr Ile Ser Asn Val Val Ser Gln Ile Gly Ala
 580 585 590
 Ser Asn Pro Gly Leu Ser Gly Cys Asp Cys Leu Ile Gln Ala Leu Leu
 595 600 605
 Glu Val Val Ser Ala Leu Ile Gln Ile Leu Gly Ser Ser Ser Ile Gly
 610 615 620

Gln Cys Asn Tyr Gly Ser Ala Gly Gln Ala Thr Gln Ile Val Gly Gln
625 630 635 640

Ser Val Tyr Gln Ala Leu
645

<210> 2
<211> 627
<212> PRT
<213> Artificial sequence

<220>
<223> MaSpII polypeptide

<400> 2

Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro
1 5 10 15

Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala Ala
20 25 30

Ala Ala Ala Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro
35 40 45

Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly
50 55 60

Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala Ala Gly
65 70 75 80

Ser Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro
85 90 95

Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala
100 105 110

Ala Ala Ala Ser Ala Ala Ala Ser Ala Glu Ser Gly Gln Gln Gly Pro
115 120 125

Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly
130 135 140

Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Ser Gly
145 150 155 160

Pro Gly Ser Ala Ala Ala Ala Ala Ala Ala Ser Gly Pro Gly Gln

165	170	175
Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr		
180	185	190
Gly Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala		
195	200	205
Ala Ala Ala Ala Ser Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly		
210	215	220
Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Leu		
225	230	235
Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gln		
245	250	255
Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Ser Gly Pro		
260	265	270
Gly Ser Ala Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gly Tyr		
275	280	285
Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly		
290	295	300
Pro Ser Gly Ala Gly Ser Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly		
305	310	315
Gln Gln Gly Leu Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly		
325	330	335
Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Gly Pro Gly Ser Ala		
340	345	350
Ser Ala Ala Ala Ala Ala Ala Gly Pro Gly Gln Gln Gly Pro Gly Gly		
355	360	365
Tyr Gly Pro Gly Gln Gln Gly Pro Ser Gly Pro Gly Ser Ala Ser Ala		
370	375	380
Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gly Tyr Gly Pro Gly Gln		
385	390	395
Gln Gly Pro Gly Gly Tyr Ala Pro Gly Gln Gln Gly Pro Ser Gly Pro		
405	410	415

Gly Ser Ala Ser Ala Ala Ala Ala Ala Ala Ala Gly Pro Gly Gly
 420 425 430

Tyr Gly Pro Gly Gln Gln Gly Pro Gly Gly Tyr Ala Pro Gly Gln Gln
 435 440 445

Gly Pro Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala Ala Ala Ala Ala
 450 455 460

Gly Pro Gly Gly Tyr Gly Pro Ala Gln Gln Gly Pro Ser Gly Pro Gly
 465 470 475 480

Ile Ala Ala Ser Ala Ala Ser Ala Gly Pro Gly Gly Tyr Gly Pro Ala
 485 490 495

Gln Gln Gly Pro Ala Gly Tyr Gly Pro Gly Ser Ala Val Ala Ala Ser
 500 505 510

Ala Gly Ala Gly Ser Ala Gly Tyr Gly Pro Gly Ser Gln Ala Ser Ala
 515 520 525

Ala Ala Ser Arg Leu Ala Ser Pro Asp Ser Gly Ala Arg Val Ala Ser
 530 535 540

Ala Val Ser Asn Leu Val Ser Ser Gly Pro Thr Ser Ser Ala Ala Leu
 545 550 555 560

Ser Ser Val Ile Ser Asn Ala Val Ser Gln Ile Gly Ala Ser Asn Pro
 565 570 575

Gly Leu Ser Gly Cys Asp Val Leu Ile Gln Ala Leu Leu Glu Ile Val
 580 585 590

Ser Ala Cys Val Thr Ile Leu Ser Ser Ser Ser Ile Gly Gln Val Asn
 595 600 605

Tyr Gly Ala Ala Ser Gln Phe Ala Gln Val Val Gly Gln Ser Val Leu
 610 615 620

Ser Ala Phe
 625

<210> 3
 <211> 625
 <212> PRT

<213> Artificial sequence

<220>

<223> ADF-3 polypeptide

<400> 3

Gly Ser Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
1 5 10 15

Pro Gly Gln Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala
20 25 30

Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly Pro Ser Gln
35 40 45

Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Arg Tyr Gly Pro
50 55 60

Gly Ala Ser Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ser
65 70 75 80

Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ser Ser
85 90 95

Ala Ala Ala Ala Ala Ala Gly Gly Asn Gly Pro Gly Ser Gly Gln Gln
100 105 110

Gly Ala Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Ala Ser Ala
115 120 125

Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly
130 135 140

Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala
145 150 155 160

Ser Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln
165 170 175

Gly Pro Gly Gln Gln Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly
180 185 190

Ala Ser Ala Ala Ala Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly
195 200 205

Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly
210 215 220

Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala Ala Ala Gly
 225 230 235 240

Gly Tyr Gly Pro Gly Tyr Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro
 245 250 255

Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ser Ala Ala
 260 265 270

Ser Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly Pro Gly Gln Gln
 275 280 285

Gly Pro Gly Gly Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala
 290 295 300

Ala Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly Pro Gly
 305 310 315 320

Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly
 325 330 335

Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala Ala Ala Gly
 340 345 350

Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro
 355 360 365

Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly
 370 375 380

Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln
 385 390 395 400

Gln Gly Pro Gly Gly Gln Gly Ala Tyr Gly Pro Gly Ala Ser Ala Ala
 405 410 415

Ala Gly Ala Ala Gly Gly Tyr Gly Pro Gly Ser Gly Gln Gln Gly Pro
 420 425 430

Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly
 435 440 445

Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln
 450 455 460

Gln Gly Pro Tyr Gly Pro Gly Ala Ser Ala Ala Ala Ala Ala Gly
 465 470 475 480

Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gly
 485 490 495

Gln Gly Pro Tyr Gly Pro Gly Ala Ala Ser Ala Ala Val Ser Val Gly
 500 505 510

Gly Tyr Gly Pro Gly Ser Ser Ser Val Pro Val Ala Ser Ala Val Ala
 515 520 525

Ser Arg Leu Ser Ser Pro Ala Ala Ser Ser Arg Val Ser Ser Ala Val
 530 535 540

Ser Ser Leu Val Ser Ser Gly Pro Thr Lys His Ala Leu Leu Ser Asn
 545 550 555 560

Thr Ile Ser Ser Val Val Ser Gln Val Ser Ala Asn Pro Gly Leu Ser
 565 570 575

Gly Cys Asp Val Leu Val Gln Ala Leu Leu Glu Val Val Ser Ala Leu
 580 585 590

Val Ser Ile Leu Gly Ser Ser Ser Ile Gly Gln Ile Asn Tyr Gly Ala
 595 600 605

Ser Ala Gln Tyr Thr Gln Met Val Gly Gln Ser Val Ala Gln Ala Leu
 610 615 620

Ala
 625

<210> 4
 <211> 5
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Acceptable repetitive units of silk polypeptide

<400> 4

Ala Ala Ala Ala Ala
 1 5

<210> 5
 <211> 4

<212> PRT
<213> Artificial sequence

<220>
<223> Acceptable repetitive units of silk polypeptide

<400> 5

Gly Ala Gly Ala
1

<210> 6
<211> 6
<212> PRT
<213> Artificial sequence

<220>
<223> Acceptable repetitive units of silk polypeptide

<400> 6

Gly Ala Gly Ala Gly Ala
1 5

<210> 7
<211> 8
<212> PRT
<213> Artificial sequence

<220>
<223> Acceptable repetitive units of silk polypeptide

<400> 7

Gly Ala Gly Ala Gly Ala Gly Ala
1 5

<210> 8
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Acceptable repetitive units of silk polypeptide

<400> 8

Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala
1 5 10

<210> 9
<211> 12
<212> PRT
<213> Artificial sequence

<220>
<223> Acceptable repetitive units of silk polypeptide

<400> 9

Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala
1 5 10

<210> 10

<211> 14

<212> PRT

<213> Artificial sequence

<220>

<223> Acceptable repetitive units of silk polypeptide

<400> 10

Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala
1 5 10

<210> 11

<211> 7

<212> PRT

<213> Artificial sequence

<220>

<223> Acceptable repetitive units of silk polypeptide

<400> 11

Gly Gly Tyr Gly Gln Gly Tyr
1 5

<210> 12

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Acceptable repetitive units of silk polypeptide

<400> 12

Ala Ala Ala Ala Ala Ala Ala Ala
1 5

<210> 13

<211> 8

<212> PRT

<213> Artificial sequence

<220>

<223> Acceptable repetitive units of silk polypeptide

<400> 13

Gly Gly Ala Gly Gln Gly Gly Tyr
1 5

<210> 14
<211> 17
<212> PRT
<213> Artificial sequence

<220>
<223> Acceptable repetitive units of silk polypeptide

<400> 14

Gly Gly Gln Gly Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly
1 5 10 15

Ala

<210> 15
<211> 8
<212> PRT
<213> Artificial sequence

<220>
<223> Acceptable repetitive units of silk polypeptide

<400> 15

Ala Ser Ala Ala Ala Ala Ala Ala
1 5

<210> 16
<211> 5
<212> PRT
<213> Artificial sequence

<220>
<223> Acceptable repetitive units of silk polypeptide

<400> 16

Gly Pro Gly Gln Gln
1 5

<210> 17
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Acceptable repetitive units of silk polypeptide

<400> 17

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln
1 5 10

<210> 18
 <211> 15
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Acceptable repetitive units of silk polypeptide

<400> 18

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln
 1 5 10 15

<210> 19
 <211> 20
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Acceptable repetitive units of silk polypeptide

<400> 19

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
 1 5 10 15

Pro Gly Gln Gln
 20

<210> 20
 <211> 25
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Acceptable repetitive units of silk polypeptide

<400> 20

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
 1 5 10 15

Pro Gly Gln Gln Gly Pro Gly Gln Gln
 20 25

<210> 21
 <211> 30
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Acceptable repetitive units of silk polypeptide

<400> 21

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
 1 5 10 15

Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln
 20 25 30

<210> 22
 <211> 35
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Acceptable repetitive units of silk polypeptide

<400> 22

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
 1 5 10 15

Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro
 20 25 30

Gly Gln Gln
 35

<210> 23
 <211> 40
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Acceptable repetitive units of silk polypeptide

<400> 23

Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly
 1 5 10 15

Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro
 20 25 30

Gly Gln Gln Gly Pro Gly Gln Gln
 35 40

<210> 24
 <211> 12
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Acceptable repetitive units of silk polypeptide

<400> 24

Gly Pro Gly Gly Gln Gly Gly Pro Tyr Gly Pro Gly
1 5 10

<210> 25
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Acceptable repetitive units of silk polypeptide

<400> 25

Ser Ser Ala Ala Ala Ala Ala Ala Ala Ala
1 5 10

<210> 26
<211> 8
<212> PRT
<213> Artificial sequence

<220>
<223> Acceptable repetitive units of silk polypeptide

<400> 26

Gly Pro Gly Ser Gln Gly Pro Ser
1 5

<210> 27
<211> 5
<212> PRT
<213> Artificial sequence

<220>
<223> Acceptable repetitive units of silk polypeptide

<400> 27

Gly Pro Gly Gly Tyr
1 5

<210> 28
<211> 34
<212> PRT
<213> Nephila spidroin

<400> 28

Ala Gly Gln Gly Gly Tyr Gly Gly Leu Gly Ser Gln Gly Ala Gly Arg
1 5 10 15

Gly Gly Leu Gly Gly Gln Gly Ala Gly Ala Ala Ala Ala Ala Ala Ala
20 25 30

Gly Gly

<210> 29
<211> 47
<212> PRT
<213> Nephila spidroin

<400> 29

Cys Pro Gly Gly Tyr Gly Pro Gly Gln Gln Cys Pro Gly Gly Tyr Gly
1 5 10 15

Pro Gly Gln Gln Cys Pro Gly Gly Tyr Gly Pro Gly Gln Gln Gly Pro
20 25 30

Ser Gly Pro Gly Ser Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala
35 40 45

<210> 30
<211> 30
<212> DNA
<213> Artificial sequence

<220>
<223> Primer

<400> 30
cgtacgaagc ttatgcacga gccggatctg 30

<210> 31
<211> 33
<212> DNA
<213> Artificial sequence

<220>
<223> Primer

<400> 31
attaactcga gcagcaaggg cttgagctac aga 33

<210> 32
<211> 15
<212> DNA
<213> Artificial sequence

<220>
<223> Linker sequence

<400> 32
tcgagcttga tgttt 15

<210> 33

<211> 157
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Linker sequence

 <400> 33
 caggatctgg acaacaagga cccggacaac aaggacccgg acaacaagga cccggacaac 60
 aaggaccata tggacccggt gcatccgccg cagcagcagc cgctggaggt tatggaccgg 120
 gatctggaca acaaggaccc agccaacaag gacctgg 157

 <210> 34
 <211> 18
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Linker sequence

 <400> 34
 ctaggttaag tttaaacg 18

 <210> 35
 <211> 59
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Primer

 <400> 35
 caggttccac tgggtgacgcg gcccaagggg cccaaggggc aggtgcagca gcagcagca 59

 <210> 36
 <211> 25
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Primer

 <400> 36
 gaaccagag cagcagtacc catag 25

 <210> 37
 <211> 16
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> Linker sequence

 <400> 37
 agcgggcccg ctcttc 16

<210> 38
<211> 13
<212> DNA
<213> Artificial sequence

<220>
<223> Primer

<400> 38
gaagagcggg ccc

13

<210> 39
<211> 17
<212> DNA
<213> Artificial sequence

<220>
<223> Linker sequence

<400> 39
gggctgctgc tgcggcc

17

<210> 40
<211> 17
<212> DNA
<213> Artificial sequence

<220>
<223> Primer

<400> 40
gggctgctgc tgcggcc

17

<210> 41
<211> 10
<212> DNA
<213> Artificial sequence

<220>
<223> Linker sequence

<400> 41
tgaaatttcg

10

<210> 42
<211> 18
<212> DNA
<213> Artificial sequence

<220>
<223> Primer

<400> 42
aattcgaaat ttcattgca

18

<210> 43
 <211> 6
 <212> PRT
 <213> Artificial sequence

 <220>
 <223> Crystal forming Gly-rich amorphous blocks of spider silk protein

 <400> 43

Gly Gly Tyr Gly Pro Gly
 1 5

<210> 44
 <211> 16
 <212> PRT
 <213> Artificial sequence

 <220>
 <223> Anti-MaSpII sequence

 <400> 44

Gly Leu Gly Ser Gln Gly Ala Gly Arg Gly Gly Gln Gly Ala Gly Ala
 1 5 10 15

<210> 45
 <211> 16
 <212> PRT
 <213> Artificial sequence

 <220>
 <223> Anti-ADF-3 sequence

 <400> 45

Ala Arg Ala Gly Ser Gly Gln Gln Gly Pro Gly Gln Gln Gly Pro Gly
 1 5 10 15

<210> 46
 <211> 360
 <212> PRT
 <213> Artificial sequence

 <220>
 <223> Translation of ADF-1

 <400> 46

His Glu Ser Ser Tyr Ala Ala Ala Met Ala Ala Ser Thr Arg Asn Ser
 1 5 10 15

Asp Phe Ile Arg Asn Met Ser Tyr Gln Met Gly Arg Leu Leu Ser Asn
 20 25 30

Ala Gly Ala Ile Thr Glu Ser Thr Ala Ser Ser Ala Ala Ser Ser Ala
35 40 45

Ser Ser Thr Val Thr Glu Ser Ile Arg Thr Tyr Gly Pro Ala Ala Ile
50 55 60

Phe Ser Gly Ala Gly Ala Gly Ala Gly Val Gly Val Gly Gly Ala Gly
65 70 75 80

Gly Tyr Gly Gln Gly Tyr Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala
85 90 95

Gly Ala Gly Ala Gly Gly Ala Gly Gly Tyr Gly Gln Gly Tyr Gly Ala
100 105 110

Gly Ala Ala Ala Ala Ala Gly Ala Gly Ala Gly Ala Ala Gly Gly Tyr
115 120 125

Gly Gly Gly Ser Gly Ala Gly Ala Gly Gly Ala Gly Gly Tyr Gly Gln
130 135 140

Gly Tyr Gly Ala Gly Ser Gly Ala Gly Ala Gly Ala Ala Ala Ala Ala
145 150 155 160

Gly Ala Ser Ala Gly Ala Ala Gly Gly Tyr Gly Gly Gly Ala Gly Val
165 170 175

Gly Ala Gly Ala Gly Ala Gly Ala Ala Gly Gly Tyr Gly Gln Ser Tyr
180 185 190

Gly Ser Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala Ala Ala Ala Ala
195 200 205

Gly Ala Gly Ala Arg Ala Ala Gly Gly Tyr Gly Gly Gly Tyr Gly Ala
210 215 220

Gly Ala Gly Ala Gly Ala Gly Ala Ala Ala Ser Ala Gly Ala Ser Gly
225 230 235 240

Gly Tyr Gly Gly Gly Tyr Gly Gly Gly Ala Gly Ala Gly Ala Val Ala
245 250 255

Gly Ala Ser Ala Gly Ser Tyr Gly Gly Ala Val Asn Arg Leu Ser Ser
260 265 270

Ala Gly Ala Ala Ser Arg Val Ser Ser Asn Val Ala Ala Ile Ala Ser

Gly Gln Gly Gly Leu Gly Ala Gly Gly Ala Gly Gln Gly Tyr Gly Ala
 115 120 125

Ala Gly Leu Gly Gly Gln Gly Gly Ala Gly Gln Gly Gly Gly Ser Gly
 130 135 140

Ala Ala Ala Ala Ala Gly Gly Gln Gly Gly Gln Gly Gly Tyr Gly Gly
 145 150 155 160

Leu Gly Pro Gln Gly Ala Gly Gly Ala Gly Gln Gly Gly Tyr Gly Gly
 165 170 175

Gly Ser Leu Gln Tyr Gly Gly Gln Gly Gln Ala Gln Ala Ala Ala Ala
 180 185 190

Ser Ala Ala Ala Ser Arg Leu Ser Ser Pro Ser Ala Ala Ala Arg Val
 195 200 205

Ser Ser Ala Val Ser Leu Val Ser Asn Gly Gly Pro Thr Ser Pro Ala
 210 215 220

Ala Leu Ser Ser Ser Ile Ser Asn Val Val Ser Gln Ile Ser Ala Ser
 225 230 235 240

Asn Pro Gly Leu Ser Gly Cys Asp Ile Leu Val Gln Ala Leu Leu Glu
 245 250 255

Ile Ile Ser Ala Leu Val His Ile Leu Gly Ser Ala Asn Ile Gly Pro
 260 265 270

Val Asn Ser Ser Ser Ala Gly Gln Ser Ala Ser Ile Val Gly Gln Ser
 275 280 285

Val Tyr Arg Ala Leu Ser
 290

<210> 48
 <211> 410
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Translation of ADF-4

<400> 48

Ala Gly Ser Ser Ala Ala Ala Ala Ala Ala Ala Ser Gly Ser Gly Gly
 1 5 10 15

Tyr Gly Pro Glu Asn Gln Gly Pro Ser Gly Pro Val Ala Tyr Gly Pro
20 25 30

Gly Gly Pro Val Ser Ser Ala Ala Ala Ala Ala Ala Ala Gly Ser Gly
35 40 45

Pro Gly Gly Tyr Gly Pro Glu Asn Gln Gly Pro Ser Gly Pro Gly Gly
50 55 60

Tyr Gly Pro Gly Gly Ser Gly Ser Ser Ala Ala Ala Ala Ala Ala Ala
65 70 75 80

Ala Ser Gly Pro Gly Gly Tyr Gly Pro Gly Ser Gln Gly Pro Ser Gly
85 90 95

Pro Gly Gly Ser Gly Gly Tyr Gly Pro Gly Ser Gln Gly Ala Ser Gly
100 105 110

Pro Gly Gly Pro Gly Ala Ser Ala Ala Ala Ala Ala Ala Ala Ala Ala
115 120 125

Ala Ser Gly Pro Gly Gly Tyr Gly Pro Gly Ser Gln Gly Pro Ser Gly
130 135 140

Pro Gly Ala Tyr Gly Pro Gly Gly Pro Gly Ser Ser Ala Ala Ala Ala
145 150 155 160

Ala Ala Ala Ala Ser Gly Pro Gly Gly Tyr Gly Pro Gly Ser Gln Gly
165 170 175

Pro Ser Gly Pro Gly Val Tyr Gly Pro Gly Gly Pro Gly Ser Ser Ala
180 185 190

Ala Ala Ala Ala Ala Ala Gly Ser Gly Pro Gly Gly Tyr Gly Pro Glu
195 200 205

Asn Gln Gly Pro Ser Gly Pro Gly Gly Tyr Gly Pro Gly Gly Ser Gly
210 215 220

Ser Ser Ala Ala Ala Ala Ala Ala Ala Ala Ser Gly Pro Gly Gly Tyr
225 230 235 240

Gly Pro Gly Ser Gln Gly Pro Ser Gly Pro Gly Gly Ser Gly Gly Tyr
245 250 255

Gly Pro Gly Ser Gln Gly Gly Ser Gly Pro Gly Ala Ser Ala Ala Ala
 260 265 270

Ala Ala Ala Ala Ala Ser Gly Pro Gly Gly Tyr Gly Pro Gly Ser Gln
 275 280 285

Gly Pro Ser Gly Pro Gly Tyr Gln Gly Pro Ser Gly Pro Gly Ala Tyr
 290 295 300

Gly Pro Ser Pro Ser Ala Ser Ala Ser Val Ala Ala Ser Val Tyr Leu
 305 310 315 320

Arg Leu Gln Pro Arg Leu Glu Val Ser Ser Ala Val Ser Ser Leu Val
 325 330 335

Ser Ser Gly Pro Thr Asn Gly Ala Ala Val Ser Gly Ala Leu Asn Ser
 340 345 350

Leu Val Ser Gln Ile Ser Ala Ser Asn Pro Gly Leu Ser Gly Cys Asp
 355 360 365

Ala Leu Val Gln Ala Leu Leu Glu Leu Val Ser Ala Leu Val Ala Ile
 370 375 380

Leu Ser Ser Ala Ser Ile Gly Gln Val Asn Val Ser Ser Val Ser Gln
 385 390 395 400

Ser Thr Gln Met Ile Ser Gln Ala Leu Ser
 405 410